

NOTICE OF ALLOWANCE

Response to Amendment

1. The declaration under 37 CFR 1.132 filed August 8, 2011 is sufficient to overcome the rejection of claims 23-25 based upon *Herr* in view of *Sakurai* and further in view of *Chan*, as applicants have shown that the compositions as claimed have improved adhesion when incorporating the polyether containing bismaleimides versus those taught by *Herr*.

EXAMINER'S AMENDMENT

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Thomas Wiseman on August 31, 2011.

The application has been amended as follows:

Please cancel claims 1-13, 15-22 and 26-41.

Please replace the structure in claim 23, Formula (3) for the following:



Please insert the following as the first paragraph of the specification below the title of the invention with the following:

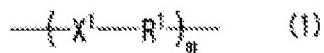
--This application is a 35 U.S.C. 371 National Stage entry of PCT Application Serial No. PCT/JP05/004700 filed on March 16, 2005, and claims the benefit of the following foreign applications: JP 2004-080924, filed on March 3, 2004; JP 2004-083936, filed on March 23, 2004; JP 2004-085885, filed on March 24, 2004; and JP 2004-371083, filed on December 12, 2004 , all of which are hereby incorporated by reference herein.--

Art Unit: 1763

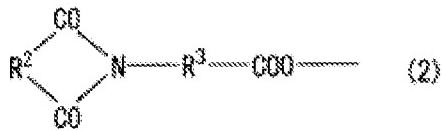
Please replace the Abstract of the Disclosure with the following:

A resin composition which is excellent in quick curing and can be used for curing in conventionally used ovens, and a semiconductor device which is excellent in reliability such as solder crack resistance or the like when the resin composition is used as a die attach material for semiconductor. Further preferably, a resin composition which has a sufficient low stress property, good adhesion and excellent bleeding property. A resin composition comprising a filler (A), the compound (B) comprising a structure represented by the formula (1) and a functional group represented by the formula (2) and a thermal radical initiator (C), and substantially not containing a photo polymerization initiator.

Formula (1) :



Formula (2) :



REASONS FOR ALLOWANCE

3. The following is an examiner's statement of reasons for allowance:

The primary reason for allowance of claims 23-25 is the inclusion of the limitation of the polyether represented as $-\text{X}^2-\text{R}^6-\text{n}-$ in the non-aromatic bismaleimide monomer in Formula (3), which is copolymerized with an allyl ester in the presence of silver and without a photoinitiator, which is required in all the claims which is not found in the prior art references, alone or in combination.

The closest prior art references are the following:

Herr (US 6,265,530)

Sakurai (JP 2003-040939)

Chan (US 5,006,575)

Herr teaches an adhesive for use in semiconductors which comprise a maleimide compound, a vinyl compound, a curing initiator, and optionally, a filler, teaching the maleimide compounds to have a structure represented by $[\text{M-X}_m]_n-$. Q. M is a maleimide moiety. When m is 0, n is 2, and Q is an ester of $-\text{R}^3-\text{C(O)O-R}^3-\text{O(CO)-R}^3-$, and R³ is an alkyl or alkyloxy, the bis-maleimides are similar to those of the instant invention; however, *Herr* fails to explicitly teach the claimed bismaleimides, when the 'middle' R³ is that of a polyether.

Sakurai teaches the claimed maleimides, teaching their use in adhesives which when prepared without a photopolymerization initiator do not yellow in the presence of sunlight, do not crack due to further progression of a photoinitiator and are capable of incorporating low amounts of maleimide derivative while maintaining a high degree of crosslinking.

Chan teaches die attach adhesive compositions teaching that silver particles are widely used in the electronics industry for the manufacture of film pastes, further teaching that the conductivity of circuits prepared from the pastes can be substantially improved by the use of flake silver particles, teaching a higher degree of electrical and heat conduction when having a size of between 10-30 μm as this allows for relatively low silver loading.

While the combination of references is at least *prima facie* obvious, applicants have shown unexpected results based on the closest prior art, by comparing applicants' compositions to those where only the bismaleimide is substituted with the closest bismaleimide of *Herr*, specifically that of Example C, the decane diol diester bismaleimide. Applicants have shown that their claimed compounds result in improved adhesion strength, which is very important when preparing a die attach adhesive for use in electronics, as is desired by *Herr*. One of ordinary skill in the art would not expect a bismaleimide with a polyether chain to have improved adhesion versus that of an alkyl.

The teachings or combination of the prior art do not suggest or disclose the claimed invention and is distinguishable over the prior art by the combination of silver with a particular size and a resin of the claimed non-aromatic bismaleimide containing polyether with an allyl ester of the instant invention.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to BRIEANN R. FINK whose telephone number is (571)270-7344. The examiner can normally be reached on Monday through Friday, 7:00 AM to 4:30 PM (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Milton I. Cano can be reached on (571)272-1398. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/MILTON I CANO/
Supervisory Patent Examiner, Art Unit 1763

/BRIEANN R FINK/
Examiner, Art Unit 1763